September 21, 1961

Dr. E.A. Carlson
Department of Zoology
University of California
Los Angeles 24, California

Dear Dr. Carlson:

I regret that it has taken so very long to submit my brief preface to the Muller Collected Papers. I hope the enclosed reaches you in time to be of some use; if not I must repeat my apologies.

Yours sincerely,

Joshua Lederberg
Professor of Genetics

Students who, like myself, have not had the fortune to study with Muller will find this collection a special benefice. Contemporary science shouts the triumphs of specialized concentration and technical finesse; fewer of its pioneers can also claim the breadth of intellect that is displayed in these pages. It is not easy to find an original thought in biological theory that has not, in some way, been anticipated here -- whether the topic be the ultramicroscopic gene, the fate of mankind on earth, or the cosmic origins of life.

To advert to my own field, bacterial genetics is not often pointedly connected with Muller's research. But I happily recall how he clarified "bacterial transformation" with an incredibly unconventional interpretation that is now the basic idea in this field,.."there were, in effect, still viable bacterial 'chromosomes' or parts of chromosomes floating free in the medium used. These might, in my opinion, have penetrated the capsuleless bacteria and in part at least taken root there, perhaps after having undergone a kind of crossing-over with the chromosomes of the host. In view of the transfer of only a part of the genetic material at a time, at least in the viruses, a method appears to be provided whereby the gene constitution of these forms can be analysed, much as in the cross-breeding tests on higher organisms. However, unlike what has so far been possible in higher organisms, viable chromosome threads could also be obtained from these lower forms for <u>in vitro</u> observation, chemical analysis, and determination of the genetic effects of treatment."*

Thoughtful reader -- you will find a world of rediscovery here.

* from "The Gene", Proc. Roy. Soc. London, B134: 1-37 (1947).